

RAW SEQUENCE LISTING

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Application Serial Number: 10/659,755B
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IFW16

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PATENT APPLICATION: US/10/659,755B

DATE: 04/09/2007

TIME: 15:00:08

Input Set : N:\EFS\04_09_07\10659755B_ef8\NBLE007US.txt
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3 <110> APPLICANT: DIXON, RICHARD A.
 4 LIU, CHANG-JUN
 5 DEAVOURS, BETTINA
 7 <120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR PRODUCTION OF FLAVONOID
 8 AND ISOFLAVONOID NUTRACEUTICALS
 10 <130> FILE REFERENCE: NBLE:007US
 12 <140> CURRENT APPLICATION NUMBER: 10/659,755B
 13 <141> CURRENT FILING DATE: 2003-09-10
 15 <150> PRIOR APPLICATION NUMBER: 60/409,447
 16 <151> PRIOR FILING DATE: 2002-09-10
 18 <160> NUMBER OF SEQ ID NOS: 15
 20 <170> SOFTWARE: PatentIn Ver. 2.1
 22 <210> SEQ ID NO: 1
 23 <211> LENGTH: 1824
 24 <212> TYPE: DNA
 25 <213> ORGANISM: Soybean
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 29 ttgaacttgc acttggttta ttgggtttgg ctctgtttct gcacttgctg cccacaccca 120
 30 ctgcacaaatc aaaagcactt cgccatctcc caaacccacc aagcccaaag cctcgcttc 180
 31 ccttcatagg acacccatcat ctctaaaaag acaaacttct ccactacgca ctcatcgacc 240
 32 tctccaaaaaa acatggtccc ttattctctc tctactttgg ctccatgcca accgttgg 300
 33 cctccacacc agaattgttc aagctctcc tccaaacgca cgaggcaact tccttcaaca 360
 34 caaggttcca aacctcagcc ataagacgccc tcacccatga tagctcagtg gccatgg 420
 35 cttcggacc ttactgaaag ttcgtgagga agctcatcat gaacgacctt cccaaacgcca 480
 36 ccactgtaaa caagttgagg ccttgagga cccaaacagac ccgcaagtcc ttaggggta 540
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 38 ccaacagcac catctccatg atgatgctcg gcgaggctga ggagatcaga gacatcgctc 660
 39 gcgaggttct taagatcttt ggcgaataaca gcctcaactga cttcatctgg ccattgaagc 720
 40 atctcaaggat tggaaagtat gagaagagga tcgacgacat cttgaacaag ttcgaccctg 780
 41 tcgttggaaag ggtcatcaag aagcggcgtg agatcgtgag gaggagaaag aacggagagg 840
 42 ttgttggagg tgaggcgtc ggggtttcc ttgacactt gcttgaattc gctgaggatg 900
 43 agaccatgga gatcaaaatc accaaggacc acatcgaggg tcttgggttc gacttttct 960
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 46 ttgtggacga agttgacact caaaaccttc cttacattag agcaatcgta aaggagacat 1140
 47 tccgcattgc cccgcaactc ccagtggtca aaagaaagtg cacagaagag tgtgagatta 1200
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 49 acccaaata ctgggacaga ccatcgagg tccgtctga gaggttccta gagacagggg 1320
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 52 ttgcattctt tattcagtgc ttgcacttgc aagtgttggg tccacaagga cagatattga 1500
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54 atagtcttgt ctgtgttcca cttgcaagga tcggcggtgc atctaaactc ctttcttaat 1620
 55 taagatcatc atcatatata atatttactt tttgtgtgtt gataatcatc atttcaataa 1680
 56 ggctctcggttc atctactttt tatgaagtat ataaggccctt ccatgcacat tgtatcatct 1740
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 58 actataaaact atcaatcctt atat 1824
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 63 <212> TYPE: PRT
 64 <213> ORGANISM: Soybean
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 70 His Leu Arg Pro Thr Pro Thr Ala Lys Ser Lys Ala Leu Arg His Leu
 71 20 25 30
 73 Pro Asn Pro Pro Ser Pro Lys Pro Arg Leu Pro Phe Ile Gly His Leu
 74 35 40 45
 76 His Leu Leu Lys Asp Lys Leu Leu His Tyr Ala Leu Ile Asp Leu Ser
 77 50 55 60
 79 Lys Lys His Gly Pro Leu Phe Ser Leu Tyr Phe Gly Ser Met Pro Thr
 80 65 70 75 80
 82 Val Val Ala Ser Thr Pro Glu Leu Phe Lys Leu Phe Leu Gln Thr His
 83 85 90 95
 85 Glu Ala Thr Ser Phe Asn Thr Arg Phe Gln Thr Ser Ala Ile Arg Arg
 86 100 105 110
 88 Leu Thr Tyr Asp Ser Ser Val Ala Met Val Pro Phe Gly Pro Tyr Trp
 89 115 120 125
 91 Lys Phe Val Arg Lys Leu Ile Met Asn Asp Leu Pro Asn Ala Thr Thr
 92 130 135 140
 94 Val Asn Lys Leu Arg Pro Leu Arg Thr Gln Gln Thr Arg Lys Phe Leu
 95 145 150 155 160
 97 Arg Val Met Ala Gln Gly Ala Glu Ala Gln Lys Pro Leu Asp Leu Thr
 98 165 170 175
 100 Glu Glu Leu Leu Lys Trp Thr Asn Ser Thr Ile Ser Met Met Met Leu
 101 180 185 190
 103 Gly Glu Ala Glu Glu Ile Arg Asp Ile Ala Arg Glu Val Leu Lys Ile
 104 195 200 205
 106 Phe Gly Glu Tyr Ser Leu Thr Asp Phe Ile Trp Pro Leu Lys His Leu
 107 210 215 220
 109 Lys Val Gly Lys Tyr Glu Lys Arg Ile Asp Asp Ile Leu Asn Lys Phe
 110 225 230 235 240
 112 Asp Pro Val Val Glu Arg Val Ile Lys Lys Arg Arg Glu Ile Val Arg
 113 245 250 255
 115 Arg Arg Lys Asn Gly Glu Val Val Glu Gly Glu Val Ser Gly Val Phe
 116 260 265 270
 118 Leu Asp Thr Leu Leu Glu Phe Ala Glu Asp Glu Thr Met Glu Ile Lys
 119 275 280 285
 121 Ile Thr Lys Asp His Ile Glu Gly Leu Val Val Asp Phe Phe Ser Ala
 122 290 295 300
 124 Gly Thr Asp Ser Thr Ala Val Ala Thr Glu Trp Ala Leu Ala Glu Leu

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127	Ile Asn Asn Pro Lys Val Leu Glu Lys Ala Arg Glu Glu Val Tyr Ser			
128	325	330	335	
130	Val Val Gly Lys Asp Arg Leu Val Asp Glu Val Asp Thr Gln Asn Leu			
131	340	345	350	
133	Pro Tyr Ile Arg Ala Ile Val Lys Glu Thr Phe Arg Met His Pro Pro			
134	355	360	365	
136	Leu Pro Val Val Lys Arg Lys Cys Thr Glu Glu Cys Glu Ile Asn Gly			
137	370	375	380	
139	Tyr Val Ile Pro Glu Gly Ala Leu Ile Leu Phe Asn Val Trp Gln Val			
140	385	390	395	400
142	Gly Arg Asp Pro Lys Tyr Trp Asp Arg Pro Ser Glu Phe Arg Pro Glu			
143	405	410	415	
145	Arg Phe Leu Glu Thr Gly Ala Glu Gly Glu Ala Gly Pro Leu Asp Leu			
146	420	425	430	
148	Arg Gly Gln His Phe Gln Leu Leu Pro Phe Gly Ser Gly Arg Arg Met			
149	435	440	445	
151	Cys Pro Gly Val Asn Leu Ala Thr Ser Gly Met Ala Thr Leu Leu Ala			
152	450	455	460	
154	Ser Leu Ile Gln Cys Phe Asp Leu Gln Val Leu Gly Pro Gln Gly Gln			
155	465	470	475	480
157	Ile Leu Lys Gly Gly Asp Ala Lys Val Ser Met Glu Glu Arg Ala Gly			
158	485	490	495	
160	Leu Thr Val Pro Arg Ala His Ser Leu Val Cys Val Pro Leu Ala Arg			
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164	515	520		
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168	<211> LENGTH: 950			
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174	<222> LOCATION: (41)..(709)			
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179	1	5		
181	acc gca atc act gtg gag aac ctt gaa tac cca gcg gtg gtt acc tct	103		
182	Thr Ala Ile Thr Val Glu Asn Leu Glu Tyr Pro Ala Val Val Thr Ser			
183	10	15	20	
185	ccg gtc acc ggc aaa tca tat ttc ctc ggt ggc gct ggg gag aga gga	151		
186	Pro Val Thr Gly Lys Ser Tyr Phe Leu Gly Gly Ala Gly Glu Arg Gly			
187	25	30	35	
189	ttg acc att gaa gga aac ttc atc aag ttc act gcc ata ggt gtt tat	199		
190	Leu Thr Ile Glu Gly Asn Phe Ile Lys Phe Thr Ala Ile Gly Val Tyr			
191	40	45	50	
193	ttg gaa gat ata gca gtg gct tca cta gct gcc aaa tgg aag ggt aaa	247		
194	Leu Glu Asp Ile Ala Val Ala Ser Leu Ala Lys Trp Lys Gly Lys			

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197	tca tct gaa gag tta ctt gag acc ctt gac ttt tac aga gac atc atc			295
198	Ser Ser Glu Glu Leu Leu Glu Thr Leu Asp Phe Tyr Arg Asp Ile Ile			
199	70	75	80	85
201	tca ggt ccc ttt gaa aag tta att aga ggg tca aag att agg gaa ttg			343
202	Ser Gly Pro Phe Glu Lys Leu Ile Arg Gly Ser Lys Ile Arg Glu Leu			
203	90	95	100	
205	agt ggt cct gag tac tca agg aag gtt atg gag aac tgt gtg gca cac			391
206	Ser Gly Pro Glu Tyr Ser Arg Lys Val Met Glu Asn Cys Val Ala His			
207	105	110	115	
209	ttg aaa tca gtt gga act tat gga gat gca gaa gct gaa gct atg caa			439
210	Leu Lys Ser Val Gly Thr Tyr Gly Asp Ala Glu Ala Glu Ala Met Gln			
211	120	125	130	
213	aaa ttt gct gaa gct ttc aag cct gtt aat ttt cca cct ggt gcc tct			487
214	Lys Phe Ala Glu Ala Phe Lys Pro Val Asn Phe Pro Pro Gly Ala Ser			
215	135	140	145	
217	gtt ttc tac agg caa tca cct gat gga ata tta ggg ctt agt ttc tct			535
218	Val Phe Tyr Arg Gln Ser Pro Asp Gly Ile Leu Gly Leu Ser Phe Ser			
219	150	155	160	165
221	ccg gat aca agt ata cca gaa aag gag gct gca ctc ata gag aac aag			583
222	Pro Asp Thr Ser Ile Pro Glu Lys Glu Ala Ala Leu Ile Glu Asn Lys			
223	170	175	180	
225	gca gtt tca tca gca gtg ttg gag act atg atc ggc gag cac gct gtt			631
226	Ala Val Ser Ser Ala Val Leu Glu Thr Met Ile Gly Glu His Ala Val			
227	185	190	195	
229	tcc cct gat ctt aag cgc tgt tta gct gca aga tta cct gcg ttg ttg			679
230	Ser Pro Asp Leu Lys Arg Cys Leu Ala Ala Arg Leu Pro Ala Leu Leu			
231	200	205	210	
233	aac gag ggt gct ttc aag att gga aac tga tgatgattat actcctatat			729
234	Asn Glu Gly Ala Phe Lys Ile Gly Asn			
235	215	220		
237	cactgcattt ccaaaagcgt tgcagcacaa gaatgagacc atgaactttt ttaagtctac			789
239	acgtttaatt ttttgtatat ctatTTACt tcttattagt atcaataata tggaaatgaaa			849
241	gatcttgctt tctactcttG tactatttct gtgatagata atgttaatga gtatcttcat			909
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249	<213> ORGANISM: Medicago sativa			
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255	20	25	30	
256	Ala Gly Glu Arg Gly Leu Thr Ile Glu Gly Asn Phe Ile Lys Phe Thr			
257	35	40	45	
258	Ala Ile Gly Val Tyr Leu Glu Asp Ile Ala Val Ala Ser Leu Ala Ala			
259	50	55	60	
260	Lys Trp Lys Gly Lys Ser Ser Glu Glu Leu Leu Glu Thr Leu Asp Phe			

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261   65          70          75          80
262 Tyr Arg Asp Ile Ile Ser Gly Pro Phe Glu Lys Leu Ile Arg Gly Ser
263           85          90          95
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265           100         105         110
266 Asn Cys Val Ala His Leu Lys Ser Val Gly Thr Tyr Gly Asp Ala Glu
267           115         120         125
268 Ala Glu Ala Met Gln Lys Phe Ala Glu Ala Phe Lys Pro Val Asn Phe
269           130         135         140
270 Pro Pro Gly Ala Ser Val Phe Tyr Arg Gln Ser Pro Asp Gly Ile Leu
271 145           150         155         160
272 Gly Leu Ser Phe Ser Pro Asp Thr Ser Ile Pro Glu Lys Glu Ala Ala
273           165         170         175
274 Leu Ile Glu Asn Lys Ala Val Ser Ser Ala Val Leu Glu Thr Met Ile
275           180         185         190
276 Gly Glu His Ala Val Ser Pro Asp Leu Lys Arg Cys Leu Ala Ala Arg
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279           210         215         220
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285 <212> TYPE: DNA
286 <213> ORGANISM: Medicago sativa
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291 atggaaagggt aaatcatctg aagagttact tgagaccctt gacttttaca gagacatcat 180
292 ctcaggtccc tttaaaaagt taatttagagg gtcaaagattt aggaaatttga gtggccctga 240
293 gtactcaagg aaggttatgg agaactgtgt ggcacacttg aaatcagttt gaacttatgg 300
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295 acctgggtgcc tctgtttctt acaggcaatc acctgtatgg atattagggc ttagtttctc 420
296 tccggataca agtataccag aaaaggagggc tgcaactata gagaacaagg cagtttcatc 480
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299 attatactct tatataaaaaa catttccaaa agcgttgcag cacaagaatg agaccatgg 660
300 ctttttiaag tctcacacgtt taattttttt tataatctt taccttctt ttagtatcaa 720
301 tagtatgaaa tgaaaatct tgctttctac tcttgtacta ttctgtgtt agataatgtt 780
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318     Met Val Ser Val Ser Glu Ile Arg Lys Ala Gln Arg Ala Glu

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